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## **7.0 DEVELOPMENT AND DESCRIPTION OF CLEANUP ALTERNATIVES**

The remedial technologies that were retained in the initial screening are assembled into cleanup alternatives. These alternatives are developed to present several options to sufficiently compare alternatives against one another.

Alternative 1: Building Demolition, Capping, and Institutional Controls

Alternative 2: Building Demolition, In-situ Solidification/Stabilization, and Institutional Controls

Alternative 3: Deferred Building Demolition, Excavation, Off-site Disposal, and Institutional Controls

Alternative 4: Building Demolition, Excavation, Off-Site Disposal, and Institutional Controls

Alternative 5: Building Demolition, Excavation, Off-Site Incineration, and Institutional Controls

These alternatives are described at a conceptual level. Actual quantities, dimensions, and engineering parameters will be determined in the remedial design phase. Cost figures are preliminary, order-of-magnitude estimates, which are developed primarily for the purpose of comparing remedial alternatives during the remedy selection.

PCB concentrations in the City of Spokane property are below the industrial cleanup level of 10 mg/Kg.; thus, no cleanup action is necessary for this property. However, because industrial cleanup levels are used, the soils will have to be capped and maintained. The City's plan to pave the property will meet this requirement. Deed restrictions limiting site use are also required.

All the alternatives will also include the removal of drywells DW1 and DW2, the underground storage tank, and the drain lines.

### **7.1 Alternative 1: Building Demolition, Capping, and Institutional Controls**

This alternative combines containment measures and institutional controls to reduce the risk of exposure to PCBs. Under this alternative, the building would be demolished, the underground storage tank, DW1, DW2, and the drain lines would all be removed. The contaminated soils would remain in place and would be covered with gravel. This alternative would include the following major elements:

- Building Demolition;
- Removal of the underground storage tank, drywells DW1 and DW2, and drain lines;
- Incineration of PCB liquid and sediments;

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- 12” gravel cap for City Parcel property and the alleyway;
  - Deed restrictions for the following properties:
    - City Parcel and City of Spokane properties limiting the use to industrial; and,
    - Alleyway to protect integrity of the gravel cap.
  - Inspection and maintenance of the gravel cap to assure the long-term integrity of the cap.

The parking lot area of the City Parcel Property and the alleyway are already covered with gravel. Additional gravel may have to be added to make a 12” gravel cap on these areas.

## **7.2 Alternative 2: Building Demolition, In-situ Solidification/Stabilization, and Institutional Controls**

This alternative makes use of solidification/stabilization, an emerging technology, to treat the PCBs in soil. Solidification agents would be mixed with the surface soils to 2 feet deep using a backhoe. The major elements of Alternative 2 are:

- Building demolition;
- Removal of the underground storage tank, dry wells DW1 and DW2, and drain lines;
- Incineration of liquid PCB and sediments;
- In-situ solidification/stabilization of soils in PCB-contaminated areas;
- Soil cover over solidified soils; and,
- Deed restrictions for the following properties;
  - City Parcel and City of Spokane properties limiting use to industrial; and,
  - Alleyway to protect integrity of the soil cap and the solidified soils; and,
- Inspection and maintenance of the cap to assure the long-term integrity of the cap.

## **7.3 Alternative 3: Deferred Building Demolition, Excavation, Off-Site Disposal, and Institutional Controls**

The major element of this alternative is the excavation of shallow soil with PCB concentrations greater than 10 mg/Kg. The soils will be disposed off-site at a TSCA permitted landfill; the closest disposal facility is located in Arlington, Oregon approximately 215 miles from Spokane. Industrial cleanup levels would be met in the City Parcel property; the residential cleanup levels of 1 mg/Kg would not be met in the alleyway. Restrictive covenants would be required for the City Parcel property because industrial cleanup levels are used, the alleyway because residential cleanup levels would not be attained, and the City of Spokane property because industrial levels are used.

Under this alternative, the building would remain in place and would be assumed to be removed sometime in the future. The removal of DW2, the underground storage tank, and the drain lines would take place prior to the building demolition. For purposes of cost calculations, the building would be assumed to be removed ten (10) years after the initiation of this alternative. Additional cleanup of contaminated soils that were

underneath the building would take place after the building is removed. This alternative will consist of the following elements:

- Removal of the underground storage tank, drywells DW1 and DW2, and drain lines;
- Incineration of liquid PCB and sediments;
- Excavation of shallow soil above 10 mg/Kg PCB in the north parking lot area and in the alleyway;
- Off-site disposal of soil in a TSCA-permitted landfill;
- Backfilling with clean soil;
- Deed restrictions for the following properties:
  - City Parcel property limiting the use to industrial, maintaining integrity of the soil cap, and requiring the excavation and off-site disposal of contaminated soils underneath the building when the building is removed;
  - City of Spokane Property limiting site use to industrial; and,
  - Alleyway to protect integrity of the soil cap; and
- Building removal with additional soil cleanup in year 10.

#### **7.4 Alternative 4: Building Demolition, Excavation, Off-Site Disposal and Institutional Controls**

The major elements of this alternative are the following:

- Building demolition;
- Limited soil sampling;
- Removal of the underground storage tank, drywells DW1 and DW2, and drain lines;
- Incineration of liquid PCB and sediments;
- Excavation of shallow soil above 10 mg/Kg PCB in the City Parcel property and in the alleyway;
- Off-site disposal of soil in a TSCA-permitted landfill;
- Backfilling with clean soil; and,
- Deed restriction for the following properties:
  - City Parcel and City of Spokane properties limiting the site to industrial use.
  - Alleyway to maintain integrity of the soil cover.

#### **7.5 Alternative 5: Building Demolition, Excavation, Off-Site Incineration, and Institutional Controls**

This alternative will consist of the following:

- Building demolition;
- Limited soil sampling;
- Removal of the underground storage tank, drywells DW1 and DW2, and drain lines;

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- Incineration of liquid PCBs and sediments;
  - Excavation of shallow soil above 10 mg/Kg PCB in the City Parcel property, and in the alleyway;
  - Off-site incineration of soil;
  - Backfilling with clean soil;
  - Deed restriction for the following properties:
    - City Parcel and City of Spokane properties limiting the site to industrial use.
    - Alleyway to maintain integrity of the soil cover.